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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,737	Applicant(s) HARRIS ET AL.	
	Examiner Munjal Patel	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/10/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/10/2009 has been entered.

1. Claim 5 is amended on 06/10/2009 with term "server" instead of "computer readable medium". The disclosure indicates "the home location database is intended to provide a generic expression which includes within its scope a home location register & a home subscriber server". The examiner interprets "generic expression" is limited to "a home location register & a home subscriber server" for the sake of compact prosecution.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1, 2, 6-12, 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shmulevich et al. (US PG PUB # US 2001/0036173 A1)** herein after referred as **Shmulevich** as applied to claims above, and further in view of **GSM 3GPP TS23.040 V4.8.0** herein after referred as **TS 23.040 & Provost et al. (US Patent # US 6801781 B1)** herein after referred as **Provost**.

4. **Regarding claim 1, Shmulevich** disclose a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP) **(Shmulevich: Abstract & Fig 1, 2 along with paragraph 0008-0009)**, the user equipment acting as an Internet Protocol (IP) client, **(Shmulevich: paragraph 0024 discloses LAN linking to the control unit)** the system comprising a short message service centre (SM-SC) **(Shmulevich: paragraph 0007 & Fig 2:42)**, a gateway mobile switching centre (GMSC) **(Shmulevich: Fig 2:72)** of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway **(Shmulevich: Fig 5:112 , Fig 3A: 74 & paragraph 0019 & 0020, 0054)** for communicating between the SMS network and the IP network and a home location database (HLR/HSS) **(Shmulevich: paragraph 0073, 0074)** for maintaining address data identifying a current location of a user equipment, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre

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to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message. **However, Shmulevich** fails to disclose explicitly the user equipment acting as an Internet Protocol (IP) client & details and definitions of the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the user

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equipment at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message.

5. **However**, the examiner maintains that it was well known in the art to provide details and definitions of the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent **(Functionality define by the standard TS 23.040: page 26, fig 5 & page 27, Section 5.2.1. line [1-2])** , the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number **(Definition of SMS-GMSC define by standard TS 23.040: page 26, fig 5 & page 9, Section 2.2.1 The subscriber identity number used with the databases is the International Mobile Subscriber Identity [IMSI])**, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway **(Definition of SMS-GMSC & MSC/SGSN by standard TS 23.040: page 26, fig 5 & page 9, Section 2.2.1)**, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway **(Definition of MSC/SGSN TS 23.040: page 26, fig 5 & page 9, Section 2.2.1)**, and to communicate the SMS message to the user equipment at the retrieved IP address via the IP network **(TS 23.040 section 2.1.1 MSC/SGSN described as performing**

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packet switching which indicates having a database that provides appropriate labels for switching), wherein the IP network includes an authentication server (TS 23.040: page 92, Fig 16a: note 1 indicates authentication procedure which indicates presence of authentication server via IP network) which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database (**MNRR definition describes when SGSN address is communicated to HLR as defined by TS 23.040: Page 14**), the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP and SMS address information and IMSI number**).

6. **Therefore**, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the **Shmulevich** with the teachings of **TS 23.040** for the purpose of providing compatibility with the **3GPP** standard.

7. **However**, **Shmulevich** in view of **TS 23.040** fail to disclose the user equipment acting as an Internet Protocol (IP) client, **however**, the examiner maintains that it was well known in the art to provide the user equipment acting as an Internet Protocol (IP) client as taught by **Provost** (**Provost: Fig 5A & Col. 6 lines [1-16] & Col 3 lines [34-47] discloses Mobile capable of handling IP protocol transaction**).

8. **In** a similar field endeavor **Provost** discloses providing a supplementary service in a mobile communication system. In addition, **Provost** discloses the user equipment acting as an Internet Protocol (IP) client.

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9. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040** by specifically providing the user equipment acting as an Internet Protocol (IP) client as taught by **Provost** for the purpose of providing compatibility with GPRS standard.

10. **Regarding claim 2, Shmulevich** in view of **Provost & TS 23.040** discloses everything in claim 1 as above, wherein the authentication server is operable to determine the IP address of the user equipment when communicating via the IP network (**Shmulevich: Fig 6 & paragraph 0059 indicates use of LAN & WAN , in both the case wireless router performs this operation on internet**), and to communicate the IP address of the user equipment to the IP/SMS gateway for storing in the IP/SMS database associated with the IP/SMS gateway for retrieval by the IP/SMS gateway in response to the received SMS message (**IP addresses are part of internet IP packets, and the storage of these addresses is equivalent to routing tables in gateways which maps it to appropriate address in connecting network, here its mapping from IP network to cellular network**). This claim is rejected for the same motivation as claim 1.

11. **Regarding claim 6, Shmulevich** disclose a method of communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP) (**Shmulevich: Abstract & Fig 2: 76, along paragraph 0008, 0009**), the user equipment acting as an Internet Protocol (IP) client, the method comprising maintaining address data identifying a current location of the user

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equipment in a home location database (**Shmulevich: Fig 2, paragraph 0025 lines[8-12] & TS 23.040 uses GMSC , SMSC & SME gateways, and HLR database**), receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message, providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network (**Shmulevich: Fig 2 & TS 23.040 Section 4 describes messaging gateways [SMS-GMSC] with attached HLR database connecting to the SC and SME**), sending the SMS message to the IP/SMS gateway, retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway (**Shmulevich: Fig 2 & TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP/SMS address information, and TS 23.040 section 3.8 describes SMS and Internet Email interworking**), and communicating the SMS message to the user equipment at the retrieved IP address via the IP network (**descriptive of internet operation**), wherein the maintaining the address data comprises determining the IP/SMS gateway address from the IP network via which the user equipment is communicating using an authentication server connected to the IP network (**Shmulevich: Fig 2 , paragraph [0022 -0024] describes IP router, Paragraph 0025 describes HSS which authenticates the user**), communicating the IP/SMS gateway address from the authentication server to the home location database (**Shmulevich: Fig 2 , & paragraph 0029**), and storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message.

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However Shmulevich fails to disclose specifically storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. Examiner maintains that it was well known in the art to provide storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP/SMS address information**) as taught by **TS 23.040**.

12. **Therefore** it would have been obvious to one of the ordinary skill in the art at the time invention was made to modify **Shmulevich** by specifically providing storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message as taught by **TS 23.040** for the purpose of providing compatibility with 3GPP standard.

13. **However, Shmulevich** in view of **TS 23.040** fail to disclose explicitly user equipment acting as an Internet Protocol (IP) client, however, the examiner maintains that it was well known in the art to provide user equipment acting as an Internet Protocol (IP) client as taught by Provost.

14. **In** a similar field of endeavor **Provost** discloses providing a supplementary service in a mobile communication system. In addition **Provost** discloses user equipment acting as an Internet Protocol (IP) client.

15. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040** by specifically providing user

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equipment acting as an Internet Protocol (IP) client as taught by **Provost**, for the purpose of providing compatibility with GPRS standard.

1. **Regarding claim 7, Shmulevich** in view of **Provost & TS 23.040** discloses the method as claimed in Claim 6 as above, along with the method comprising determining the IP address of the user equipment when communicating via the IP network (**Shmulevich: paragraph 0023-0025 discloses IP router with encryption (HSS authentication) operating attached to the internet**), communicating the IP address of the user equipment to the IP/SMS gateway (**Shmulevich: paragraph 0026 lines [1-13]**), and storing the IP address of the user equipment in an IP/SMS database associated with the IP/SMS gateway (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP/SMS address information**), the IP address being stored in association with the subscriber identity number for retrieval in response to the received SMS message (**TS 23.040 Section 4 describes messaging gateways [SMS-GMSC] with attached HLR database**). This claim is rejected for the same motivation as claim 6.

2. **Regarding claim 8, Shmulevich** in view of **Provost & TS 23.040** discloses the method as claimed in Claim 6 as above comprising setting a flag in the home location database for at least the subscriber identity number of the user equipment, the flag being indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (**TS 23.040 section 3.8.2.3 defines the Optional Control Flag which is user defined, here it is**

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defined to provide information regarding UE's busy using IP network for the purpose of enabling decision to provide alternate means of routing). This claim is rejected for the same motivation as claim 6.

3. **Regarding claim 9, Shmulevich** in view of **Provost & TS 23.040** discloses everything in Claim 6 as above, along with setting the flag in the home location database to indicate that the user equipment is currently communicating via the IP terminated network, and not setting the flag to indicate that the SMS message should be communicated via a serving support node of a cellular mobile radio network for delivery to the user equipment (**this limitation is read as use the flag in a binary fashion, wherein SET selects IP communication, and CLEARED selects mobile communication but this describes the opposite logical state of the flag described in claim 8**) this claim is rejected for the same motivation as claim 6.

4. **Regarding claim 10, Shmulevich** disclose a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP) (**Shmulevich: Fig 2 & TS 23.040 Fig 5 & section 4 describes a network from a Mobile Station to a service center [SC] that connects to short message entity [SME] on a fixed network outside the GSM network, and is capable of interconnecting messages with these external networks, and TS 23.040 section 2.1.1 describes that the gateway SMS-GMSC holds SMS routing information**), the user equipment acting as an Internet Protocol (IP) client, the system comprising means for maintaining address data identifying a current location of the

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user equipment in a home location database (**Shmulevich: Fig 2 & TS 23.040 Fig 5 along with definition of SMS-GMSC describes function of MSC capable of receiving a SMS from SC, interrogating an HLR for routing information and SMS information and delivering SMS to the SGSN of the recipient MS**), means for receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message (**text is descriptive of GSM network**), means for providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP/SMS address information**), means for sending the SMS message to the IP/SMS gateway (**TS 23.040 section 4 describes the SME connected to the SMS-GMSC**), means for retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway (**Shmulevich: Fig 2 & TS 23.040 SMS-GMSC with HLR database attached**), and means for communicating the SMS message to the user equipment at the retrieved IP address via the IP network (**descriptive of internet operation**), wherein the means for maintaining the address data comprises means for determining from an authentication server forming part of the IP network the IP/SMS gateway address via which the user equipment is communicating, means for communicating the IP/SMS gateway address from the authentication server to the home location database, and means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. **However Shmulevich** fails to disclose the user equipment acting as an Internet

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Protocol (IP) client, & means for maintaining the address data comprises means for determining from an authentication server forming part of the IP network the IP/SMS gateway address from the IP network via which the user equipment is communicating, means for communicating the IP/SMS gateway address from the authentication server to the home location database and means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message however Examiner maintains that it will well known in the art to provide the user equipment acting as an Internet Protocol (IP) client & means for determining from an authentication server forming part of the IP network the IP/SMS gateway address from the IP network via which the user equipment is communicating (TS 23.040 Fig 18 b, c, d describes MS getting authenticated by VLR which is connected to SGSN), means for communicating the IP/SMS gateway address from the authentication server to the home location database (TS 23.040 Fig 5 describes VLR communicating to HLR via SGSN and SMSC-GMSC), and means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message (TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP/SMS address information as taught by TS 23.040).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Shmulevich by specifically providing means for determining from an authentication server forming part of the IP network the IP/SMS gateway address from the IP network via which the user equipment is communicating means for communicating the IP/SMS gateway address from the authentication server to the home location database, and

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means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message as taught by **TS 23.040** for the purpose of providing compatibility with 3GPP standard.

16. **However, Shmulevich** in view of **TS 23.040** fail to disclose explicitly user equipment acting as an Internet Protocol (IP) client, however, the examiner maintains that it was well known in the art to provide user equipment acting as an Internet Protocol (IP) client as taught by **Provost**.

17. **In** a similar field of endeavor **Provost** discloses providing a supplementary service in a mobile communication system. In addition **Provost** discloses user equipment acting as an Internet Protocol (IP) client.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040** by specifically providing user equipment acting as an Internet Protocol (IP) client as taught by **Provost**, for the purpose of providing compatibility with GPRS standard.

5. **Regarding claim 11, Shmulevich** in view of **Provost & TS 23.040** discloses everything in claim 10 as above, along with means for determining an Internet Protocol (IP) address of the user equipment when communicating via the IP network (**descriptive of initialization of device on internet**), means for communicating the IP address of the user equipment to an IP/SMS gateway (**descriptive of routing of IP packets on internet**), and means for storing the IP address of the user equipment in the IP/SMS database associated with the IP/SMS gateway (**descriptive of Registering of IP address of UE & associated SGSN to VLR**), the IP address

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being stored in association with the subscriber identity number, for retrieval in response to the SMS message (**TS 23.040 Section 4 describes messaging gateways SGSN with attached VLR database**). This claim is rejected for the same motivation as claim 10.

6. **Regarding claim 12, Shmulevich** in view of **Provost & TS 23.040** discloses everything in Claim 10 as above along with means for setting a flag in the home location database for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (**Shmulevich in view of TS 23.040 uses the SC and SME gateways to connect to IP networks, and the HLR database stores addressing data based on International Mobile Subscriber Identity [IMSI] and the Optional Control Flag can be user defined**). This claim is rejected for the same motivation as claim 10.

7. **Regarding claim 15, Shmulevich** in view of **Provost & TS 23.040** discloses everything in claim 2 as above, wherein the home location database is arranged to set for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (**TS 23.040 section 3.8.2.3 defines the Optional Control Flag which is user defined to control email redirection**). This claim is rejected for the same motivation as claim 2.

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8. **Regarding claim 16, Shmulevich** in view of **Provost & TS 23.040** discloses everything in claim 7 as above along with setting a flag in the home location database for at least the subscriber identity number of the user equipment, the flag being indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (**TS 23.040 section 3.8.2.3 defines the Optional Control Flag , which can be redefined or extended by the either the SC or SME to control email redirection at the SMS-GMSC for the purpose same as claim 8**). This claim is rejected for the same motivation as claim 7.

9. **Regarding claim 17, Shmulevich** in view of **Provost & TS 23.040** discloses everything in claim 11 as above along with means for setting a flag in the home location database for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (**TS 23.040 Section 4 describes messaging gateways [SMS-GMSC] with attached HLR database, holding SMS routing information which would include IP/SMS address information, for further specifics TS 23.040 section 3.2.6 describes ‘The Mobile Station Not Reachable Flag (MNRF) within the HLR’ that explicitly describes whether the mobile is available to communicate via SMS, and from TS 23.040 section 2.1.1 the HLR database stores other address information, and TS 23.040 section 3.8.2.3 defines the Optional Control Flag at the which can be redefined or extended by the either the SC or SME to control email redirection**). This claim is rejected for the same motivation as claim 11.

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10. **Claims 3-5, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmulevich in view of Provost & TS 23.040 as applied to claim 1 & 3 above, and further in view of Uyless Black (Mobile & Wireless Networks published in 1999) herein after referred as Uyless.**

11. **Regarding claim 3, Shmulevich in view of Provost & TS 23.040 discloses the system as claimed in Claim 1 as above, wherein the home location database is arranged to set for at least the subscriber identity number of the user equipment (TS 23.040 section 2.1.1 HLR stores MSIN by definition), a flag indicative of whether the user equipment is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag (HLR stores the routing information & SMS information by definition, TS 23.040 section 2.1.1 SMS-GMSC).**

However Shmulevich in view of Provost & TS 23.040 fails to disclose a flag indicative of whether the user equipment is currently communication via the ip network, however, the examiner maintains that it was well known in the art to provide a flag indicative of whether the user equipment is currently communication via the ip network (Mobile & Wireless networks by uyless black: page 317 line [22-26] GPRS class A & B monitors packet switched system which refers to having indicator or flag to monitor) as taught by Uyless.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **Provost & TS 23.040** by specifically

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providing a flag indicative of whether the user equipment is currently communication via the ip network as taught by **Uyless** for the purpose of providing uninterrupted service.

Regarding claim 4, Shmulevich in view of **Provost & TS 23.040** discloses everything in Claim 1 as above, the authentication server is operable to set the flag in the home location database to indicate that the user equipment is currently communicating via the IP terminated network and if not set to indicate that the SMS message should be communicated via a serving support node of a cellular mobile radio network for delivery to the user equipment, **However Shmulevich** in view of **Provost & TS 23.040** fails to disclose the authentication server is operable to set the flag in the home location database to indicate that the user equipment is currently communicating via the IP terminated network and if not set to indicate that the SMS message should be communicated via a serving support node of a cellular mobile radio network for delivery to the user equipment, **however**, the examiner maintains that it was well known in the art to provide the authentication server is operable to set the flag in the home location database to indicate that the user equipment is currently communicating via the IP terminated network (**Mobile & Wireless networks by uyless black: page 317 line [22-26] GPRS class A & B monitors packet switched system**) and if not set to indicate that the SMS message should be communicated via a serving support node of a cellular mobile radio network for delivery to the user equipment (**TS 23.040 section 3.8.2.3 defines the Optional Control Flag at the which can be redefined or extended by the either the SC or SME to control email redirection**) as taught by **Uyless**.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **Provost & TS 23.040** by specifically providing the authentication server is operable to set the flag in the home location database to indicate that the user equipment is currently communicating via the IP terminated network and if not set to indicate that the SMS message should be communicated via a serving support node of a cellular mobile radio network for delivery to the user equipment as taught by **Uyless** for the purpose of providing uninterrupted service.

12. **Regarding claim 5, Shmulevich** in view of **TS 23.040** disclose a home location database stored on a server, the home location database for maintaining address data identifying a current location of a user equipment (**TS 23.040 Section 2.1.1 describes the home location data base HLR implemented as a function in the gateway MSC [SMS-GMSC] hardware**), the address data providing an address to which an SMS message addressed to the user equipment at a subscriber identity number should be sent (**TS 23.040 section 2.1.1 the gateway holds SMS routing information**), wherein the home location database is arranged to provide a gateway mobile switching centre with an address of an IP/SMS gateway for communicating the SMS message to the user equipment at the subscriber identity number (**TS 23.040 Section 4 describes messaging gateways [SMS-GMSC] with attached HLR database**), when the user equipment is communicating via an Internet Protocol (IP) network using an Internet Protocol, communication being terminated on the IP network (**Shmulevich: Fig 2**) and the user equipment acting as an Internet Protocol (IP) client, the address of the IP/SMS gateway being provided by an authentication server (**TS 23.040: page 92, Fig 16a: note 1 indicates authentication**

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procedure which indicates presence of authentication server), which determines the IP/SMS gateway from the IP network via which the user equipment (**description of IP functionality**) is communicating the home location database being arranged to store for at least the subscriber identity number of the user equipment (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which includes IP, SMS address information and IMSI number**), a flag indicative of whether the user equipment is currently communicating via the IP network and acting as an Internet Protocol (IP) client, and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent (**TS 23.040 section 3.8.2.3 defines the Optional Control Flag which can be redefined or extended by the SC or SME to control email redirection**). **However Shmulevich** in view of **TS 23.040** fails to disclose a flag indicative of whether the user equipment is currently communicating via the IP network, **however** examiner maintains that it was well known in the art to provide a flag indicative of whether the user equipment is currently communicating via the IP network (**Mobile & Wireless networks by Uyless black: page 317 line [22-26] GPRS class A & B monitors packet switched system**) as taught by **Uyless**.

13. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040** by specifically providing a flag indicative of whether the user equipment is currently communicating via the IP network as taught by **Uyless** for the purpose of providing uninterrupted service.

14. **However, Shmulevich** in view of **TS 23.040 & Uyless** fail to disclose explicitly user equipment acting as an Internet Protocol (IP) client, **however**, the examiner maintains that it was

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well known in the art to provide user equipment acting as an Internet Protocol (IP) client as taught by **Provost**.

15. **In** a similar field of endeavor **Provost** discloses providing a supplementary service in a mobile communication system. In addition **Provost** discloses user equipment acting as an Internet Protocol (IP) client.

16. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040 & Uyless** by specifically providing user equipment acting as an Internet Protocol (IP) client as taught by **Provost**, for the purpose of providing compatibility with GPRS standard.

17. **Regarding claim 18, Shmulevich** discloses a network of devices for communicating a Short Message Service (SMS) message to a mobile device using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP) (**Shmulevich: Abstract and Fig 1-2 along with paragraph 0008-0009**), the mobile device acting as an Internet Protocol (IP) client (**Shmulevich: paragraph 0024 discloses LAN linking to the control unit**), the network of devices comprising a short message service centre (SM-SC) (**Shmulevich: paragraph 0007 & Fig 2:42**), a gateway mobile switching centre (GMSC) (**Shmulevich: Fig 2:72**) of an SMS network for communicating SMS messages (**Shmulevich: paragraph 0054 lines [18-20] discloses SMS gateway carrying SMS messages between SMS center 42, hence SMS network**), an Internet Protocol/SMS (IP/SMS) gateway (**Shmulevich: Fig 5:112, Fig 3A:74 & paragraph 0019-0020 & 0054**) for communicating between the SMS network (**Shmulevich: paragraph 0054 lines [18-20] discloses SMS gateway carrying SMS**

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messages between SMS center 42, hence SMS network), the mobile device (Shmulevich:)
and the IP network **(Shmulevich: Fig 3A, 3B & 4:90)** and a home location database (HLR/HSS)
(Shmulevich: paragraph 0029 discloses HLR/HSS) for maintaining address data identifying a
current location of the mobile device, the gateway mobile switching centre **(Shmulevich: Fig**
3A, 3B & 4:90) being operable ,

in response to the SMS message received from the short message service centre to
interrogate the home location database for an address to which the SMS message should be sent,
the home location database being operable to provide the gateway mobile switching centre with
an address of the IP/SMS gateway stored in association with the subscriber identity number, the
gateway switching centre being operable

to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to
retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an
IP/SMS database associated with the IP/SMS gateway, and

to communicate the SMS message to the mobile device at the retrieved IP address via the
IP network, wherein the IP network includes an authentication server which is operable to
determine the IP/SMS gateway address from the IP network via which the mobile device is
communicating, and to communicate the IP/SMS gateway address to the home location database,
the IP/SMS gateway address being stored in the home location database in association with the
subscriber identity number for retrieval by the gateway mobile switching centre in response to
the received SMS message,

wherein the home location database sets for at least the subscriber identity number of the
mobile device, a flag indicative of whether the mobile device is currently communicating via the

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IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. **However, Shmulevich** fails to disclose explicitly the user equipment acting as an Internet Protocol (IP) client & in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable

to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and

to communicate the SMS message to the mobile device at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the mobile device is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message,

wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag.

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18. **However**, the examiner maintains that it was well known in the art to provide in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent (**Functionality define by the standard TS 23.040: page 26, fig 5 & page 27, Section 5.2.1. line [1-2]**), the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number (**Definition of SMS-GMSC define by standard TS 23.040: page 26, fig 5 & page 9, Section 2.2.1 The subscriber identity number used with the databases is the International Mobile Subscriber Identity [IMSI], hence HLR communicating accordingly with GMSC**), the gateway switching centre being operable

to send the SMS message to the IP/SMS gateway (**Definition of SMS-GMSC & MSC/SGSN by standard TS 23.040: page 26, fig 5 & page 9, Section 2.2.1**), the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway (**Definition of MSC/SGSN TS 23.040: page 26, fig 5 & page 9, Section 2.2.1**), and

to communicate the SMS message to the mobile device at the retrieved IP address via the IP network (**TS 23.040 section 2.1.1 MSC/SGSN described as performing packet switching which indicates having a database that provides appropriate labels for switching**), wherein the IP network includes an authentication server (**TS 23.040: page 92, Fig 16a: note 1 indicates authentication procedure which indicates presence of authentication server via IP network**) which is operable to determine the IP/SMS gateway address from the IP network via which the mobile device is communicating, and to communicate the IP/SMS gateway address to the home

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location database (**MNRR definition describes when SGSN address is communicated to HLR as defined by TS 23.040: Page 14**), the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message (**TS 23.040 section 2.1.1 describes that the gateway holds SMS routing information which would include IP and SMS address information and IMSI number**),

wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag

19. **Therefore**, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the **Shmulevich** with the teachings of **TS 23.040** for the purpose of providing compatibility with the **3GPP** standard.

20. **However Shmulevich** in view of **TS 23.040** fails to disclose a flag indicative of whether the user equipment is currently communicating via the IP network, **however** examiner maintains that it was well known in the art to provide a flag indicative of whether the user equipment is currently communicating via the IP network (**Mobile & Wireless networks by Uyless black: page 317 line [22-26] GPRS class A & B monitors packet switched system**) as taught by **Uyless**.

21. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040** by specifically providing a flag

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indicative of whether the user equipment is currently communicating via the IP network as taught by **Uyless** for the purpose of providing uninterrupted service.

22. **However, Shmulevich** in view of **TS 23.040 & Uyless** fail to disclose the user equipment acting as an Internet Protocol (IP) client, **however**, the examiner maintains that it was well known in the art to provide the user equipment acting as an Internet Protocol (IP) client as taught by **Provost (Provost: Fig 5A & Col. 6 lines [1-16] & Col 3 lines [34-47] discloses Mobile capable of handling IP protocol transaction).**

23. **In** a similar field endeavor **Provost** discloses providing a supplementary service in a mobile communication system. In addition, Provost discloses the user equipment acting as an Internet Protocol (IP) client.

24. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Shmulevich** in view of **TS 23.040 & Uyless** by specifically providing the user equipment acting as an Internet Protocol (IP) client as taught by **Provost** for the purpose of providing compatibility with GPRS standard.

Response to Arguments

18. Applicant's arguments filed on 06/10/2009 have been fully considered but they are not persuasive.

- a. Applicant's argument regarding 35 U.S.C. 112 on page 9 paragraph 2 is withdrawn in view of applicant's response of examiner's interpretation of "the generic expression" is limited to "a home location register & a home subscriber server".

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- b. Applicant's argument regarding 35 U.S.C. 103 on page 9 ¶ 3- page 10 ¶ 4 citing **Shmulevich**: paragraph 0054 as indication of IP network connection between the gateways but not between mobile network and User Equipment(UE), the examiner disagrees as paragraph 54 lines [4-7] clearly suggest cellular infrastructure is replaced by IP network, which the examiner interprets as IP network directly communicating with UE. However, for citation the examiner has clearly provided additional reference **Provost (Col 3 lines [24-26] & [34-47])** to prove UE communicating directly with IP Network.
- c. In response to applicant's argument that page 10 ¶ 5 – page 11 ¶ 1 regarding **Shmulevich** teaches away from the claimed invention, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).
- d. Applicant's argument on page 11 ¶ 1 regarding no advantage of **Shmulevich's** invention and it will involve complex modification, the examiner disagree in Art it is always business decision for implementing a technology, advantage and complexity are taken into consideration while making business decision.
- e. Applicant's argument on page 11 ¶ 2 - page 13 ¶ 3 regarding Provost Fig 1 failing to teach UE connection with IP network, however the examiner disagrees as cited **(Provost: Fig 5A & Col. 6 lines [1-16] & Col 3 lines [34-47])** Provost clearly teaches UE capable of handling IP protocol transaction.
- f. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

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combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, providing compatibility with GPRS standard.

g. Applicant's argument on page 13 ¶ 4 - page 16 ¶ 1 regarding **Uyless** fails to teach setting a flag and the fact that a class B station is capable of "monitoring" both circuit switched and packet switched networks do not imply flag is set when the UE is attached to an IP network", however, the examiner disagrees, It is very well known technique in art to have a flag as an indication of an event, or to monitor a particular condition, here it is UE being attached to IP network. **Uyless** indicates monitoring the event as cited, it is obvious to perform it via setting a flag to indicate it.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Friday 9:00 AM - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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